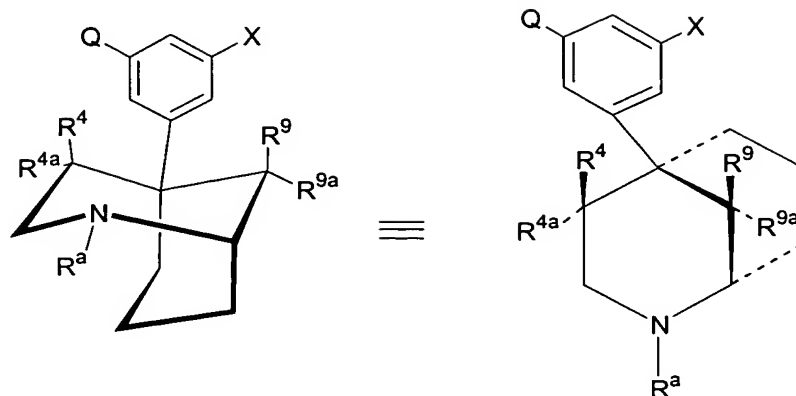


Claims:

1. A compound of formula I:



formula I

- 5                      wherein R<sup>a</sup> is H or a  $-(CH_2)_n-\begin{matrix} R^3 \\ R^1 \\ R^2 \end{matrix}$  group;
- Wherein X is H, halogen, -CN, -C≡C-R<sup>3a</sup> or a -C<sub>1</sub>-C<sub>4</sub> alkyl group optionally substituted with from one to three halogen atoms;
- Q is H, halogen, a C<sub>1</sub>-C<sub>6</sub> alkyl, -CN, -NH<sub>2</sub>, -NH(C<sub>1</sub>-C<sub>4</sub> alkyl), -N(C<sub>1</sub>-C<sub>4</sub> alkyl)(C<sub>1</sub>-C<sub>4</sub> alkyl), -C(=O)NH<sub>2</sub>, -C(=O)NH(C<sub>1</sub>-C<sub>4</sub> alkyl), -C(=O)N(C<sub>1</sub>-C<sub>4</sub> alkyl)(C<sub>1</sub>-C<sub>4</sub> alkyl), -NHC(=O)H, -
- 10        NHC(=O)R<sup>8</sup>, or -NHS(=O)<sub>2</sub>R<sup>8</sup>;
- R<sup>1</sup> and R<sup>2</sup> are independently H, a C<sub>1</sub>-C<sub>6</sub> alkyl, -(CH<sub>2</sub>)<sub>j</sub>-aryl, -(CH<sub>2</sub>)<sub>j</sub>-heteroaryl, wherein said alkyl, -(CH<sub>2</sub>)<sub>j</sub>-aryl or -(CH<sub>2</sub>)<sub>j</sub>-heteroaryl group is optionally substituted with one or more R<sup>10</sup> groups, or with the carbon to which R<sup>1</sup> and R<sup>2</sup> are attached, R<sup>1</sup> and R<sup>2</sup> form a C<sub>3</sub>-C<sub>7</sub> carbocyclic or 4- to 7-membered heterocyclic group, wherein said heterocyclic group
- 15        comprises from one to three heteroatoms selected from the group consisting of O, S and N and said carbocyclic or heterocyclic group optionally contains a -C(=O) group or optionally contains one or more double bonds and is optionally fused to or substituted with a C<sub>6</sub>-C<sub>14</sub> aryl or a 5-14 membered heteroaryl group; wherein said C<sub>3</sub>-C<sub>7</sub> carbocyclic or 4- to 7-membered heterocyclic group formed by R<sup>1</sup> and R<sup>2</sup> may optionally be substituted with from one to three
- 20        R<sup>10</sup> groups, and said optionally fused or substituted aryl or heteroaryl group may each optionally independently be substituted with from one to six R<sup>10</sup> groups;
- R<sup>10</sup> groups are independently selected from R<sup>11</sup>, H, halogen, -OR<sup>11</sup>, -NO<sub>2</sub>, -CN, -C<sub>1</sub>-C<sub>6</sub> alkyl, -C<sub>3</sub>-C<sub>6</sub> cycloalkyl, -C(R<sup>3</sup>)R<sup>10a</sup>R<sup>10b</sup>, aryl optionally substituted with from 1 to 3 R<sup>3</sup> groups, -(CH<sub>2</sub>)<sub>v</sub>-NR<sup>11</sup>R<sup>12</sup>, -NR<sup>11</sup>C(=O)R<sup>12</sup>, -C(=O)NR<sup>11</sup>R<sup>12</sup>, -OC(=O)R<sup>11</sup>, -C(=O)OR<sup>11</sup>, C(=O)R<sup>11</sup>, -NR<sup>11</sup>C(=O)OR<sup>12</sup>, -NR<sup>11</sup>C(=O)NR<sup>12</sup>R<sup>13</sup>, -NR<sup>12</sup>S(=O)<sub>2</sub>R<sup>11</sup>, -NR<sup>11</sup>S(=O)<sub>2</sub>NR<sup>12</sup>R<sup>13</sup>, and -S(=O)<sub>2</sub>R<sup>11</sup>;
- 25

R<sup>3</sup> is absent or is H, -C<sub>1</sub>-C<sub>4</sub> alkyl, which optionally contains one or two unsaturated bonds, -OH, -O(C<sub>1</sub>-C<sub>4</sub>)alkyl, -(C<sub>1</sub>-C<sub>4</sub>)alkylOH, -(CH<sub>2</sub>)<sub>n</sub>-NR<sup>10a</sup>R<sup>10b</sup>, -(CH<sub>2</sub>)<sub>n</sub>-NHC(=O)(C<sub>1</sub>-C<sub>4</sub> alkyl), -(CH<sub>2</sub>)<sub>n</sub>-NO<sub>2</sub>, -(CH<sub>2</sub>)<sub>n</sub>-C≡N, -(CH<sub>2</sub>)<sub>n</sub>-C(=O)NH<sub>2</sub>, -(CH<sub>2</sub>)<sub>n</sub>-C(=O)NH(C<sub>1</sub>-C<sub>4</sub> alkyl) or -(CH<sub>2</sub>)<sub>v</sub>-C(=O)NR<sup>10a</sup>R<sup>10b</sup>;

5 R<sup>3a</sup> is H or C<sub>1</sub>-C<sub>6</sub> alkyl which may be optionally substituted with one or more halogen groups;

each R<sup>4</sup>, R<sup>4a</sup>, R<sup>9</sup> and R<sup>9a</sup> is independently H, -C<sub>1</sub>-C<sub>4</sub> alkyl or -O-C<sub>1</sub>-C<sub>4</sub> alkyl;

each R<sup>8</sup>, R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> is independently selected from H, -C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, aryl, -(C<sub>2</sub>-C<sub>4</sub> alkyl)-O-(C<sub>1</sub>-C<sub>4</sub>alkyl), aryl, -(CH<sub>2</sub>)<sub>m</sub>-NR<sup>14</sup>R<sup>15</sup>, or a 4- to 7-membered  
10 heterocyclic group, or where any two groups selected from R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> can form a heterocyclic ring with the atom to which they are attached, wherein said heterocyclic group or said heterocyclic ring is optionally substituted with at least one C<sub>1</sub>-C<sub>4</sub> alkyl group;

each R<sup>10a</sup> and R<sup>10b</sup> is independently selected from H, -C<sub>1</sub>-C<sub>4</sub> alkyl; or, independently in each instance of -C(R<sup>3</sup>)R<sup>10a</sup>R<sup>10b</sup>, R<sup>10a</sup> and R<sup>10b</sup> connect to form a C<sub>3</sub>-C<sub>7</sub> carbocyclic ring or a  
15 4-7 membered heterocyclic ring or in each instance of -(CH<sub>2</sub>)<sub>v</sub>-C(=O)NR<sup>10a</sup>R<sup>10b</sup>, R<sup>10a</sup> and R<sup>10b</sup> connect to form a 4-7 membered heterocyclic ring;

R<sup>14</sup> and R<sup>15</sup> are independently H, C<sub>1</sub>-C<sub>6</sub> alkyl or together may form a 4- to 7-membered carbocyclic or heterocyclic ring;

j is in each instance independently an integer from 0 to 5;

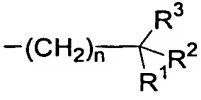
20 m is 0 or an independently variable integer 2 or greater;

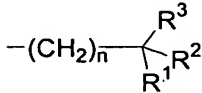
n is in each instance independently an integer from 0 to 5;

v is in each instance independently an integer from 0 to 5;

and pharmaceutically acceptable salts thereof,

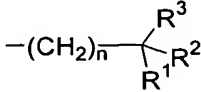
with the provisos that

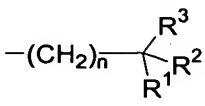
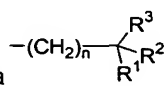
25 a) when R<sup>a</sup> is  and n is 0, and when the carbon to which R<sup>1</sup>, R<sup>2</sup> and R<sup>4</sup> are bound is sp<sup>3</sup> hybridized (i.e., "saturated"), then none of R<sup>1</sup>, R<sup>2</sup> and R<sup>4</sup> can be a heteroatom or contain a heteroatom which is directly linked to the carbon of said

 group;

30 b) R<sup>8</sup> cannot be H when part of a -NHS(=O)<sub>2</sub>R<sup>8</sup> group, R<sup>11</sup> cannot be H when part of a -NR<sup>12</sup>S(=O)<sub>2</sub>R<sup>11</sup> and -S(=O)<sub>2</sub>R<sup>11</sup>; and

c) v of -(CH<sub>2</sub>)<sub>v</sub>- cannot be 1 when said methylene unit is connected to N, O or S;

2. A compound according to claim 1 wherein R<sup>a</sup> is a  group.

3. A compound according to claim 1 wherein Q is  $-C(=O)NH_2$  or  $-NHSO_2R^8$ .
4. A compound according to claim 1 wherein Q is  $-NHSO_2R^8$ .
5. A compound according to claim 3, wherein  $R^a$  is a  group
6. A compound according to claim 1 or 2 wherein X is H or F.
7. A compound according to claim 6 wherein Q is  $-C(=O)NH_2$  or  $-NHSO_2R^8$ .
8. A compound according to claim 1 wherein  $R^1$  and  $R^2$  taken together with the carbon to which they are attached form a cyclobutane, cyclopentane, cyclohexane, indane-2-yl or 1,2,3,4-tetrahydronaphth-2-yl, which may be unsubstituted or substituted with  $R^{10}$  groups.
9. A compound according to claim 8 wherein Q is  $-C(=O)NH_2$  or  $-NHSO_2R^8$ .
10. A compound according to claim 1, wherein Q is  $-C(=O)NH_2$  or  $-NHSO_2R^8$ ;  $R^a$  is a  group; and  $R^1$  and  $R^2$  taken together with the carbon to which they are attached form a cyclobutane, cyclopentane, cyclohexane, indane-2-yl or 1,2,3,4-tetrahydronaphth-2-yl which may be unsubstituted or substituted with  $R^{10}$  groups.
11. A compound according to claim 10 wherein  $R^3$  is H, OH,  $-NH(=O)-CH_3$ ,  $-C(=O)NH_2$ ,  $-CH_2OH$  or  $-OCH_3$ .
12. A compound according to claim 10 wherein  $R^3$  is OH.
13. A compound according to claim 2 wherein n is 1, 2 or 3.
14. A compound according to claim 1 wherein  $R^4$  and  $R^9$  are independently H or a  $-C_1-C_4$  alkyl.
15. A compound according to claim 1 wherein  $R^4$  and  $R^9$  are independently H or  $CH_3$ .
16. A compound according to claim 1 wherein  $R^4$  and  $R^9$  are both  $CH_3$ .
17. A compound according to claim 1 wherein Q is  $-C(=O)NH_2$  or  $-NHSO_2R^8$  and  $R^8$  is  $CH_3$ ,  $-(CH_2)_2-O-CH_3$  or  $-4-(1-methylimidazole)$ .
18. A compound according to claim 1 wherein Q is  $-C(=O)NH_2$ ,  $-NHSO_2CH_3$  or  $-NHSO_2CH_2CH_2OCH_3$  and X is H.
19. A compound according to claim 1 selected from:
  - 3-(2-Ethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;
  - 3-(2-Cyclopropylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;
  - 3-(2-Isobutyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;
  - 3-[2-(3-Methyl-butyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;
  - 3-(2-Pentyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;
  - 3-[2-(1H-Pyrrol-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;

- 3-[2-(1*H*-Imidazol-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(1-Hydroxy-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-(2-Hexyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-[2-(2-Ethyl-butyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
5 3-[2-(1-Methyl-1*H*-pyrrol-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-(2-Thiophen-3-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-(2-Thiazol-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-[2-(1-Hydroxymethyl-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-(2-Heptyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
10 3-(2-Phenethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-[2-(3-Cyclopentyl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(2-Ethyl-hexyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-(2-Octyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-[2-(3-Phenyl-prop-2-ynyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
15 3-[2-(3-Phenyl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(4-Methoxy-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(3-Cyclohexyl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-[3-(1-Hydroxy-cyclopentyl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(1*H*-Indol-3-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
20 3-(2-Benzofuran-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-(2-Indan-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-(2-Naphthalen-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-(2-Naphthalen-1-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-[2-[3-(1-Hydroxy-cyclohexyl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
25 3-[2-[3-(1-Hydroxymethyl-cyclopentyl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl]-  
benzamide;  
3-(2-Quinolin-4-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-(2-Quinolin-3-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-[2-(4-Chloro-2-fluoro-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
30 3-[2-(1-Methyl-1*H*-indol-3-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(1,2,3,4-Tetrahydro-naphthalen-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-  
benzamide;  
3-[2-(3-Phenyl-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(2-Hydroxy-indan-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
35 3-[2-(2-Phenethyloxy-ethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(4-Hydroxy-naphthalen-1-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(3-Indan-2-yl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;

- 3-[2-(4-Pyrrolidin-1-yl-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(2-Hydroxy-1,2,3,4-tetrahydro-naphthalen-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(1-Hydroxy-3-phenyl-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
5 3-[2-(3-Methyl-benzo[*b*]thiophen-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-[2-(4-Chloro-phenyl)-2-cyano-ethyl]-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-(2-Biphenyl-4-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-benzamide;  
3-[2-(3-Trifluoromethoxy-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-[3-(2-Hydroxy-indan-2-yl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
10 3-[2-(9*H*-Fluoren-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
3-[2-(3-Phenoxy-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide; and  
3-[2-(4-Dimethylamino-naphthalen-1-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-benzamide;  
and pharmaceutically acceptable salts thereof.  
15 20. A compound according to claim 1 selected from:  
*N*-[3-(2-Ethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
*N*-[3-(2-Cyclopropylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
*N*-[3-(2-Isobutyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
20 *N*-[3-[2-(3-Methyl-butyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl]-methanesulfonamide;  
*N*-[3-(2-Pentyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
*N*-[3-[2-(1*H*-Pyrrol-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl]-methanesulfonamide;  
*N*-[3-[2-(1*H*-Imidazol-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl]-methanesulfonamide;  
25 methanesulfonamide;  
*N*-[3-[2-(1-Hydroxy-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl]-methanesulfonamide;  
*N*-[3-(2-Hexyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
*N*-[3-[2-(2-Ethyl-butyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl]-methanesulfonamide;  
30 *N*-[3-[2-(1-Methyl-1*H*-pyrrol-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl]-methanesulfonamide;  
*N*-[3-(2-Thiophen-3-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
*N*-[3-(2-Thiazol-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
35 methanesulfonamide;  
*N*-[3-[2-(1-Hydroxymethyl-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl]-methanesulfonamide;

- N*-[3-(2-Heptyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
*N*-[3-(2-Phenethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
*N*-{3-[2-(3-Cyclopentyl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;
- 5        *N*-{3-[2-(2-Ethyl-hexyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;  
         *N*-[3-(2-Octyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
         *N*-{3-[2-(3-Phenyl-prop-2-ynyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;
- 10       *N*-{3-[2-(3-Phenyl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;  
         *N*-{3-[2-(4-Methoxy-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;
- N*-{3-[2-(3-Cyclohexyl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;
- 15       *N*-(3-{2-[3-(1-Hydroxy-cyclopentyl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl}-phenyl)-methanesulfonamide;
- N*-{3-[2-(1*H*-Indol-3-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;
- N*-[3-(2-Benzofuran-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;
- 20       *N*-[3-(2-Indan-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;  
         *N*-[3-(2-Naphthalen-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;
- N*-[3-(2-Naphthalen-1-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;
- 25       *N*-(3-{2-[3-(1-Hydroxy-cyclohexyl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl}-phenyl)-methanesulfonamide;
- N*-(3-{2-[3-(1-Hydroxymethyl-cyclopentyl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl}-phenyl)-methanesulfonamide;
- N*-[3-(2-Quinolin-4-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;
- 30       *N*-[3-(2-Quinolin-3-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-methanesulfonamide;
- N*-{3-[2-(4-Chloro-2-fluoro-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;
- 35       *N*-{3-[2-(1-Methyl-1*H*-indol-3-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-(1,2,3,4-Tetrahydro-naphthalen-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-(3-Phenyl-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

5        *N*-{3-[2-(2-Hydroxy-indan-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-(2-Phenethyloxy-ethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

10       *N*-{3-[2-(4-Hydroxy-naphthalen-1-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-(3-Indan-2-yl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-(4-Pyrrolidin-1-yl-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

15       *N*-{3-[2-(2-Hydroxy-1,2,3,4-tetrahydro-naphthalen-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-(1-Hydroxy-3-phenyl-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

20       *N*-{3-[2-(3-Methyl-benzo[*b*]thiophen-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-[2-(4-Chloro-phenyl)-2-cyano-ethyl]-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-(Biphenyl-4-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

25       *N*-{3-[2-(3-Trifluoromethoxy-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-[3-(2-Hydroxy-indan-2-yl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

30       *N*-{3-[2-(9*H*-Fluoren-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

*N*-{3-[2-(3-Phenoxy-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide; and

*N*-{3-[2-(4-Dimethylamino-naphthalen-1-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-methanesulfonamide;

35       and pharmaceutically acceptable salts thereof.

21.       A compound according to claim 1 selected from:

- 2-Methoxy-ethanesulfonic acid [3-(2-ethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid [3-(2-cyclopropylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 5 2-Methoxy-ethanesulfonic acid [3-(2-isobutyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(3-methyl-butyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid [3-(2-pentyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 10 2-Methoxy-ethanesulfonic acid {3-[2-(1*H*-pyrrol-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(1*H*-imidazol-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 15 2-Methoxy-ethanesulfonic acid {3-[2-(1-hydroxy-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid [3-(2-hexyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(2-ethyl-butyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 20 2-Methoxy-ethanesulfonic acid {3-[2-(1-methyl-1*H*-pyrrol-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid [3-(2-thiophen-3-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 25 2-Methoxy-ethanesulfonic acid [3-(2-thiazol-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(1-hydroxymethyl-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid [3-(2-heptyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 30 2-Methoxy-ethanesulfonic acid [3-(2-phenethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(3-cyclopentyl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 35 2-Methoxy-ethanesulfonic acid {3-[2-(2-ethyl-hexyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;



- 2-Methoxy-ethanesulfonic acid [3-(2-octyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(3-phenyl-prop-2-ynyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 5 2-Methoxy-ethanesulfonic acid {3-[2-(3-phenyl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(4-methoxy-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(3-cyclohexyl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 10 2-Methoxy-ethanesulfonic acid (3-{2-[3-(1-hydroxy-cyclopentyl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl}-phenyl)-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(1*H*-indol-3-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 15 2-Methoxy-ethanesulfonic acid [3-(2-benzofuran-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid [3-(2-indan-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid [3-(2-naphthalen-2-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 20 2-Methoxy-ethanesulfonic acid [3-(2-naphthalen-1-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid (3-{2-[3-(1-hydroxy-cyclohexyl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl}-phenyl)-amide;
- 25 2-Methoxy-ethanesulfonic acid (3-{2-[3-(1-hydroxymethyl-cyclopentyl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl}-phenyl)-amide;
- 2-Methoxy-ethanesulfonic acid [3-(2-quinolin-4-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 2-Methoxy-ethanesulfonic acid [3-(2-quinolin-3-ylmethyl-2-aza-bicyclo[3.3.1]non-5-yl)-phenyl]-amide;
- 30 2-Methoxy-ethanesulfonic acid {3-[2-(4-chloro-2-fluoro-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(1-methyl-1*H*-indol-3-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 35 2-Methoxy-ethanesulfonic acid {3-[2-(1,2,3,4-tetrahydro-naphthalen-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;

- 2-Methoxy-ethanesulfonic acid {3-[2-(3-phenyl-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(2-hydroxy-indan-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 5 2-Methoxy-ethanesulfonic acid {3-[2-(2-phenethyloxy-ethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(4-hydroxy-naphthalen-1-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(3-indan-2-yl-propyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 10 2-Methoxy-ethanesulfonic acid {3-[2-(4-pyrrolidin-1-yl-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(2-hydroxy-1,2,3,4-tetrahydro-naphthalen-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 15 2-Methoxy-ethanesulfonic acid {3-[2-(1-hydroxy-3-phenyl-cyclobutylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(3-methyl-benzo[*b*]thiophen-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid (3-[2-[2-(4-chloro-phenyl)-2-cyano-ethyl]-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl)-amide;
- 20 2-Methoxy-ethanesulfonic acid [3-(2-biphenyl-4-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(3-trifluoromethoxy-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 25 2-Methoxy-ethanesulfonic acid (3-[2-[3-(2-hydroxy-indan-2-yl)-propyl]-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl)-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(9*H*-fluoren-2-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide;
- 2-Methoxy-ethanesulfonic acid {3-[2-(3-phenoxy-benzyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide; and
- 30 2-Methoxy-ethanesulfonic acid {3-[2-(4-dimethylamino-naphthalen-1-ylmethyl)-2-aza-bicyclo[3.3.1]non-5-yl]-phenyl}-amide
- and pharmaceutically acceptable salts of said compounds.
22. A pharmaceutical composition comprising an effective amount of a
- 35 compound according to any of claim 1 in combination with a pharmaceutically acceptable carrier, excipient or additive.

23. A method of treating in a mammal, in need thereof, a disease state, disorder or condition mediated by an opioid receptor or receptors which method comprises administering to said mammal an amount of a compound according to claim 1 effective in inhibiting an opioid receptor or receptors.

5 24. A method of treating in a mammal, in need thereof, a disease state, disorder or condition selected from the group consisting of irritable bowel syndrome, constipation, nausea, vomiting, pruritic dermatoses, psoriasis; eczema; an insect bite; an eating disorder, depression, anxiety, schizophrenia; drug addiction, an opioid overdose, sexual dysfunction, stroke, head trauma, traumatic brain injury, spinal damage, Parkinson's disease, Alzheimer's  
10 disease, age-related cognitive decline and Attention Deficit and Hyperactivity Disorder which method comprises administering to said mammal an amount of a compound of claim 1 effective in treating said disease state, disorder or condition.

25. A method of treating in a mammal, in need thereof, a disease state, disorder or condition selected from the group consisting of irritable bowel syndrome, drug addiction, depression, anxiety, schizophrenia and eating disorders which method comprises  
15 administering to said mammal an amount of a compound of claim 1 effective in treating said disease state, disorder or condition.

26. A method of treating in a mammal, in need thereof, a disease state, disorder or condition selected from the group consisting of allergic dermatitis, contact dermatitis, anorexia, bulimia, obesity, alcohol addiction, amphetamine addiction, cocaine addiction, morphine addiction, opium addiction, heroin addiction, erectile dysfunction and impotence, which method comprises administering to said mammal an effective amount of a compound  
20 of claim 1 for treating said disease state, disorder or condition.

27. Use of a compound of claim 1 in the manufacture of a medicament for the  
25 treatment of a mammal.

28. Use of a compound of claim 1 in the manufacture of a medicament for the treatment of a mammal, in need thereof, of a disease state, disorder or condition selected from the group consisting of irritable bowel syndrome, constipation, nausea, vomiting, pruritic dermatoses, psoriasis, eczema; an insect bite; an eating disorder, depression, anxiety, schizophrenia; drug addiction, an opioid overdose, sexual dysfunction, stroke, head trauma, traumatic brain injury, spinal damage, Parkinson's disease, Alzheimer's disease, age-related  
30 cognitive decline and Attention Deficit and Hyperactivity Disorder.

29. Use of a compound of claim 1 in the manufacture of a medicament for the treatment of a mammal, in need thereof, of a disease state, disorder or condition selected from the group consisting of allergic dermatitis, contact dermatitis, anorexia, bulimia, obesity, alcohol addiction, amphetamine addiction, cocaine addiction, morphine addiction, opium addiction, heroin addiction, erectile dysfunction and impotence.  
35

30. A compound of claim 1 wherein one or more atoms thereof have an atomic mass or mass number different from the atomic mass or mass number usually found in nature, or a pharmaceutically acceptable salt of such compound.

5 31. A method for obtaining an image of opioid receptors in a mammalian subject, which method comprises administering to said subject an amount of a compound of claim 1, or pharmaceutically acceptable salt thereof, effective in imaging opioid receptors in said subject.